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10/598,403	07/02/2007	**Colin Genner**	2802-931-002	3798

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EXAMINER	
ZEC, FILIP	

ART UNIT	PAPER NUMBER
3785	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/598,403	GENNER, COLIN	
	Examiner	Art Unit	
	Filip Zec	3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 August 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/28/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: the specification submitted 2/18/2008 is not in compliance with the guidelines outlined below, specifically, the specification lacks the appropriate section headings.

Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

2. The abstract of the disclosure is objected to because it contains legal phraseology "means" and "said". Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 2 recite the limitation “the metal tubes of the system” in their respective line 8. There is a lack of antecedent basis for said limitation and the claims were examined assuming the limitation - - the plurality of tubes - - . Claims 1 and 12 also recite the limitation “a first part of the system is located inside of the box and a second part of which” in their respective line 4. It is unclear what limitation is “the system" referring to and what limitation is “which” referring to. The claims have been examined assuming the limitation - - a first part of said system is located inside of the box and a second part of said system - - .

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over U.S. Patent 2,374,185 to Kleen (Kleen).

In reference to claim 1, Kleen discloses a cooling apparatus (FIG. 1-9; page 1, col 1, lines 1-9) comprising an insulated (14, FIG. 6; page 1, col 2, line 25) chiller or freezer box (17, FIG. 6), accessible by a door (18 and 43, FIG. 6), and means for cooling the interior of the box (42, 41, 23, 31, FIG. 6), said means comprising a heat exchanger (42 and fins of 42, FIG. 6) including a tube evaporator system (20 and 32, FIG. 2 and 23, 42, 31 and 41, FIG. 6) wherein a first part of said system (42 and fins of 42, FIG. 6) is located inside of the box (17, FIG. 6) and a second part of said system (23, FIG. 6) is located outside of the box (in 16, FIG. 6), wherein said system comprises a plurality of tubes (finned cooling coil 42, FIG. 6; page 2, col 1, lines 52-53) connected to provide a pathway for a refrigerant which in use is circulated between said first part and said second part of said system (page 1, col 2, lines 30-55).

Kleen teaches that the plurality of tubes (42, FIG. 6), when in use, contact refrigerant which is at a temperature of -15°C to -20°C, which is in the claimed range of -5 to -50°C (page 3, col 1, line 50), but is silent as to the method of making said tubes, wherein said tubes are connected by lap joints sealed in a gas tight manner by a solder which has a melting temperature of from 180°C to 300°C. The claimed phrase "connected by lap joints sealed in a gas tight

manner by a solder which has a melting temperature of from 180°C to 300°C" is being treated as a product by process limitation; that is, that the plurality of tubes is made by connecting said tubes by soldering. As set forth in MPEP 2113, product by process claims are NOT limited to the manipulations of the recited steps, only to the structure implied by the steps. Once a product appearing to be substantially the same or similar is found, a 35 U.S.C. 102/103 rejection may be made and the burden is shifted to applicant to show an unobvious difference. See MPEP 2113.

Thus, even though Kleen is silent as to the process used to connect the evaporator tubes, it appears that the product in Kleen would be the same or similar as that claimed; especially since both the applicant's product and the prior art product are made of a metal material (see instant spec at page 4, line 17-19).

Additionally, "the lack of physical description in a ***product-by-process*** claim makes determination of the patentability of the claim more difficult, since in spite of the fact that the claim may recite only process limitations, it is the patentability of the product claimed and not of the recited process steps which must be established. We are therefore of the opinion that when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown*, 459 F.2d 531, 535, 173 USPQ 685, 688 (CCPA 1972). Thus, the fact that the applicant is claiming that the first and second heat exchanger system tubes are connected

to the other by lap joints sealed in a gas tight manner by a solder has been given limited patentable weight.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleen in view of U.S. Patent 4,193,530 to Holmes (Holmes).

In reference to claim 2, Kleen discloses the method for manufacturing cooling apparatus (FIG. 1-9; col 1, lines 1-9) comprising an insulated (14, FIG. 6; page 1, col 2, line 25) chiller or freezer box (17, FIG. 6), accessible by a door (18 and 43, FIG. 6), and means for cooling the interior of the box (42, 41, 23, 31, FIG. 6), said means comprising a heat exchanger (42 and fins of 42, FIG. 6) including a tube evaporator system (20 and 32, FIG. 2 and 23, 42, 31 and 41, FIG. 6) wherein a first part of the system (42 and fins of 42, FIG. 6) is located inside of the box (17, FIG. 6) and a second part of said system (23, FIG. 6) is located outside of the box (in 16, FIG. 6), wherein said system comprises a plurality of tubes (finned cooling coil 42, FIG. 6; page 2, col 1, lines 52-53) connected to provide a pathway for a refrigerant which in use is circulated between said first part and said second part of said system (page 1, col 2, lines 30-55), wherein the metal tubes of the system which in use contact refrigerant which is at a temperature of -15°C to -20°C, which is in the claimed range of -5 to-50°C (page 3, col 1, line 50), but does not teach that the method being characterized in that the metal tubes of the system which in use contact refrigerant

which is at a temperature of -5 to-50°C are joined by a process comprising preparing a lap joint between two of said tubes and sealing said tubes in a gas tight manner with a solder which has a melting temperature of from 180 to 300°C. Holmes teaches a method for sealing metal tubes using soldered lap joints (col 2, lines 29-32 and col 3, lines 3-4) by using tin solder alloy and melting said solder to be applied at 240-260°C (col 2, lines 32-33) in order to prevent corrosion in metal tubes sealed using soldered lap joints (col 1, lines 40-43).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Kleen, to use tin alloy solder and being melted in said ranges, as taught by Holmes, in order to prevent corrosion in metal tubes sealed using soldered lap joints.

In reference to claims 3-7, Kleen discloses the cooling apparatus as described in the rejection of claim 1, but does not teach that the solder comprises at least 80% by wt tin (per claim 3), that the solder comprises at least 95% by wt tin (per claim 4), that the solder melts in the range of from 200 to 250°C (per claim 5), that the solder melts in the range of 220 to 240°C (per claim 6) and that the solder comprises at least 80% by wt tin and melts in the range 200 to 250°C (per claim 7). Holmes teaches a method for sealing metal tubes using soldered lap joints (col 2, lines 29-32 and col 3, lines 3-4) by using tin solder alloy having 99.0-99.8% by wt tin (col 2, lines 20-22) and melting said solder to be applied at 240-260°C (col 2, lines 32-33) in order to prevent corrosion in metal tubes sealed using soldered lap joints (col 1, lines 40-43).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Kleen, to use tin alloy solder comprising said

weight percentages and being melted in said ranges, as taught by Holmes, in order to prevent corrosion in metal tubes sealed using soldered lap joints.

In reference to claims 8-12, Kleen discloses the method of manufacturing cooling apparatus as described in the rejection of claim 2, but does not teach that the solder comprises at least 80% by wt tin (per claim 8), that the solder comprises at least 95% by wt tin (per claim 9), that the solder melts in the range of from 200 to 250°C (per claim 10), that the solder melts in the range of 220 to 240°C (per claim 11) and that the solder comprises at least 80% by wt tin and melts in the range 200 to 250°C (per claim 12). Holmes teaches a method for sealing metal tubes using soldered lap joints (col 2, lines 29-32 and col 3, lines 3-4) by using tin solder alloy having 99.0-99.8% by wt tin (col 2, lines 20-22) and melting said solder to be applied at 240-260°C (col 2, lines 32-33) in order to prevent corrosion in metal tubes sealed using soldered lap joints (col 1, lines 40-43).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Kleen, to use tin alloy solder comprising said weight percentages and being melted in said ranges, as taught by Holmes, in order to prevent corrosion in metal tubes sealed using soldered lap joints.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 3,066,406 to White teaches soldering of zinc containing surfaces.

U.S. Patent 6,805,974 to Choi et al. teaches lead-free tin-silver-copper alloy solder composition.

U.S. Patent 3,494,144 to Schill teaches rotary drum flake ice maker.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Filip Zec whose telephone number is 571-270-5846. The examiner can normally be reached on Monday-Friday, from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules or Cheryl Tyler can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cheryl J. Tyler/
Supervisory Patent Examiner, Art Unit 3744

/F. Z./
Examiner, Art Unit 3744

9/29/2010